

Ionic Compound Puzzle Activity

For the statements below, use the correct term from the word bank to fill in the blank.

| Word Bank (not all words will be used) | | | |
|--|--------|---------|----------|
| Isotopes | Repel | Anion | positive |
| Ions | Cation | Attract | negative |
| | | | neutral |

- _____ are atoms that carry a charge.
- Charges can be _____ or _____
- Atoms that carry a positive charge are called _____
- Atoms that carry a negative charge are called _____
- Opposite charges _____ one another

Metals tend to form **positive ions** because **they give up electrons**, when they give up something with a negative charge, they become positive.

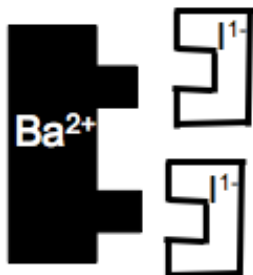
Non-metals tend to form **negative ions** because **they take electrons** from other atoms, when they take on something with a negative charge, they become negative.

Earlier this semester we talked about **John Dalton**, his model of the atom was basic, it was a solid sphere that could bounce around with perfect elasticity. This model of the atom was not very useful, but Dalton did come up with some very important information that we will look at today. He said that **atoms come together in fixed proportions, another way to say this could be atoms “bond” together in the same ratios.**

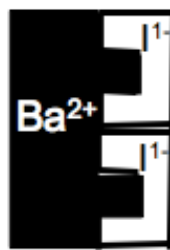
Today we will look at ions as puzzle pieces and see how they fit together. **The GOAL is to get the pieces to fit together in a way that leaves no tabs or indentions using the least number of puzzle pieces.** Each tab represents a +1 (an electron has been taken) and each indentation represents a -1 (an electron has been added).

For example:

The barium and iodine ions have opposite charges, which cause them to attract one another. Barium has two tabs, which need two indentions to make a perfect puzzle



So barium comes together with two iodine ions because iodine only has one indentation



Barium iodide is formed. The chemical formula is BaI_2

The subscript 2 indicates how many iodine ions there are in the compound

For the following pairings, DRAW THE COMPLETE PUZZLE (remember not all piece will be used and the goal is to have no tabs or indentations left) Attempt to write the formula based on the number of each ion there is in the puzzle!

Cu^{2+} and P^{3-} Formula: _____

Cu^{+} and N^{3-} Formula: _____

Ag^{1+} and Br^{1-} Formula: _____

Ca^{2+} and Cl^{1-} Formula: _____

Al^{3+} and O^{2-} Formula: _____

Na^{+} and As^{3-} Formula: _____

Physical Science

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